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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,292	01/14/2002	Stefan Heinen	112740-388	9521
29177	7590	10/24/2005	EXAMINER	
BELL, BOYD & LLOYD, LLC P. O. BOX 1135 CHICAGO, IL 60690-1135			ROBERTS, BRIAN S	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/031,292	Applicant(s) HEINEN ET AL.	
	Examiner Brian Roberts	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- Claims 1-15 have been cancelled.
- Claims 16-30 remain pending.

Drawings

1. The drawings are objected to because the elements of Figures 1 and 2 should be clearly labeled to facilitate reading of the Figures. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 29 is objected to because of the following informalities:

In claim 29, "channelas" should read --channel as--

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- In reference to claim 30

Claim 30 recites the limitation "the quantizer" in line 19. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 16-17, 21-25, and 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Lagerqvist et al. (US 5502713)

- In reference to claim 16 and 24

In Figure 2, Lagerqvist et al. teaches decoding system and method that includes:

- A channel decoder (14) for decoding the received signal (column 4 lines 30-35)
- The channel decoder (14) obtaining reliability information, which is correlated with transmission quality, via estimating the bit error rate (column 4 lines 35-50)
- The channel decoder (14) determines source-coded parameters such as the CRC from the received signal (column 4 lines 40-44)
- The channel decoder (14) located at a base station the passes the source coded parameters via a codeword to the speech decoder (17) located at a MSC (column 5 lines 36-51)
- The speech decoder (17) decodes the codeword and reconstructs the parameter value (column 5 lines 39-41)
- A soft value calculator (15) and soft error concealment means (16) for implementing an error concealment algorithm that estimates the transmitted source-coded parameters from the received source-coded parameters via the reliability information. The channel decoder, as well as the soft value calculator (15) and soft error concealment means (16) for implementing the error concealment algorithm are located at a base station and the speech

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decoder (17) is located at a MSC. The codeword for the parameters are passed to the speech decoder (17) (column 5 lines 5-57)

- In reference to claim 17

Lagerqvist et al. teaches quantizing the source-coded parameters into codewords so that the speech decoder can decode and reconstruct the codewords into parameters via a table lookup. (column 5 lines 5-57) (column 6 lines 9-15)

- In reference to claim 21 and 22

Lagerqvist et al. teaches utilizing the received parameters and the reliability information received at the receiving end to estimate the transmitted source-coded parameters and the probability of error of the estimate. (column 6 lines 48-54)

- In reference to claim 23 and 30, as best understood

Lagerqvist teaches the system and method conforming to the GSM Standard. (column 3 lines 20-27)

- In reference to claim 25

Lagerqvist et al. inherently teaches a quantizer for quantizing the source-coded parameters into codewords so that the speech decoder can decode and reconstruct the codewords into parameters via a table lookup. (column 5 lines 5-57) (column 6 lines 9-15)

- In reference to claim 29

Lagerqvist et al. teaches that the channel decoder (14) is located at a base station. (column 5 lines 36-51)

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 18-19 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lagerqvist et al. (US 5502713)

- In reference to claim 18 and 26

Lagerqvist et al. teaches a system and method that covers substantially all limitations of the parent claim.

Lagerqvist et al. does not explicitly teach that the quantization steps are the same for the transmitted source-coded parameters as those for the estimated source-coded parameters.

Lagerqvist et al. teaches transmitting a quantized parameter from the receiver to the transmitter and processing the received parameter. (column 5 lines 21-35)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of Lagerqvist et al. to include utilizing the

same quantization steps the transmitted source-coded parameters as those for the estimated source-coded parameters so that the estimated source-coded parameters will have the exact same quantization values as the transmitted source-coded parameters if no errors are present.

- In reference to claim 19 and 27

Lagerqvist et al. teaches a system and method that covers substantially all limitations of the parent claim.

Lagerqvist et al. does not explicitly teach using further quantization steps for the transmitted source-coded parameters as those for the estimated source-coded parameters.

Lagerqvist et al. teaches estimating a parameter value utilizing an interpolation function that includes the previous frame's parameters, quality measures for the previous frames, the received parameters for the present frame, and the received quality for the present frame. (column 5 lines 6-20)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of Lagerqvist et al. to include using further quantization steps for the transmitted source-coded parameters as those for the estimated source-coded parameters in order to ensure that the signal is not severely distorted while utilizing the linear interpolation function in the case where the transmitted source-coded parameter has a small bit/sample value.

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9. Claims 20 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lagerqvist et al. (US 5502713) in view of DeMartin et al. (US 6421527)

- In reference to claim 20 and 28

Lagerqvist et al. teaches a system and method that covers substantially all limitations of the parent claim.

Lagerqvist et al. does not explicitly teach quantization of the estimated source-coded parameters is carried out as a function of a current coding rate.

DeMartin et al. teaches a system and method for dynamic adaptation of the data/channel coding in a GSM wireless system. DeMartin et al. teaches adjusting the channel coding and the source-coding rate between a full rate channel mode and a half rate channel mode according to the conditions of the channel as specified in the GSM AMR. The number of quantization steps for the coding process is changed according to the channel mode. (column 3 lines 48-65)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of Lagerqvist et al. to include adjusting the coding rate and quantization steps as taught by DeMartin et al. because adjusting the coding rate and quantization steps allows the system to adapt between channel modes depending on whether the channel conditions are good or bad.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

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- Furuya (US 557787) teaches a variable modulation communication method and system.
- Wigren et al. teaches a communication system with a speech decoder, parameter modifier and speech decoder.
- Ward et al. (US 5701294) teaches a system and method for flexible coding, modulation, and time slot allocation in a radio telecommunications network.
- Kleijn (US 5717823) teaches a speech-rate modification method for linear-prediction based analysis-by-synthesis speech codes.
- Jamal et al. (US 5901186) teaches a system with a channel decoder and speech decoder for detecting bit errors.
- Liu et al. (US 5960010) teaches an error detection and error concealment method of convolutionally encoded data.
- Wong et al. (US 5983174) teaches a confidence and frame signal quality determination method in a soft decision convolutional decoder.
- Haavisto (US 6208715) teaches a method and apparatus with a speech and channel decoder for transmitting messages in a telecommunication system.
- Bruhn (US 6256487) teaches a multiple mode transmitter using multiple speech/channel coding modes wherein the coding mode is conveyed to the receiver with the transmitted signal.
- Bruhn (US 6452941) teaches a method and system for alternating transmission of codec mode information.


- Frodigh et al. (US 6456627) teaches a method for indicating to a receiver the modulation type, channel coding and speech coding used in a transmitted burst.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Roberts whose telephone number is (571) 272-3095. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BSR
10/19/2005


JOHN PEZZLO
PRIMARY EXAMINER